

ABSTRACT

A connection end portion of a PC fiber 10 is fused by heating to provide a sealing portion 15 which seals holes 12a of a cladding 12. Length L of the sealing portion 15 is determined by calculation based on the conditions such as an incident angle θ [$^{\circ}$] of signal light 22 with respect to the PC fiber 10, an outer diameter D [μm] of the fiber, a diameter a [μm] of the core of the fiber and a refractive index n of the sealing portion 15.